



Why **Teachers** Must Go Mobile

A former teacher turned mobile phone expert encourages teachers to use cell phones in lessons.

BY ANGELA PASCOPELLA

AS A MIDDLE AND HIGH school math teacher for 14 years in the Norman (Okla.) School District and Dallas (Texas) Independent School District, Cathleen Norris at first thought the idea of using cell phones in a classroom was absurd. "Are you kidding?" she asked. "Would I want that distraction? That would make me crazy."

But Norris, now a Regents Professor in the department of Learning Technologies at the University of North Texas and co-creator of GoKnow Learning, sees the value of cell phones now. First, more people are using smartphones over laptops in their travels, she says. And at the core of cell phones are these facts: they are small, affordable, mobile and operate with a "data plan," which makes them perfect for educational purposes. "That is why there is an incredible opportunity for this administration to close the digital divide," Norris says. "They [administrators] use E-rate, and E-rate covers Internet connectivity for children. Every child could leave school with exactly the same access to technology."

Wary of Change

Norris says that while cell phones are more familiar and, therefore, less intimidating than most computers, teachers are still wary of change, especially with technology. "With cellular, they can build complete lessons," Norris says. "It's about showing them how. Any time you change what is done, it trips people up."

Another issue with cell phones is the



Norris high-fives a third-grader in Kona, Hawaii, after helping the youngster with a math problem.

small screen size. "Teachers, in general, prefer a larger screen," Norris says.

Teachers are also fearful of students taking videos of them and posting them on YouTube and of students texting during class. But there are programs from companies such as SOTI (www.soti.net)

these are the same tools they will use after high school. Using cell phones helps them learn "how to cooperate with each other and write better," she adds.

Norris suggests that schools create a responsible use policy in lieu of an acceptable use policy. "We should

"That is why there is an incredible opportunity for this administration to close the digital divide." —Cathleen Norris

that can turn off a phone's camera as well as the Internet so that only the word processor is available to students, Norris says.

As the gatekeeper of learning, teachers must feel comfortable, Norris stresses. "Whether they like the material or not, teachers must meet the students where they are," she says. "And it's absolutely essential to catch those kids no later than third grade."

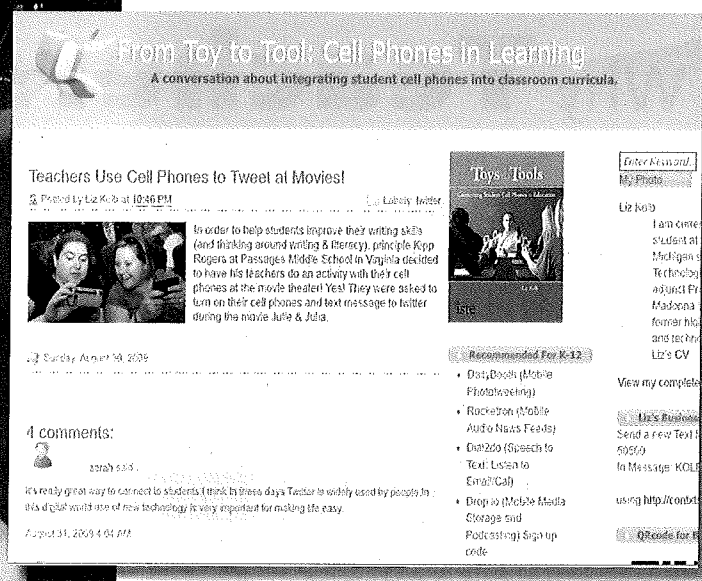
Teaching How to Communicate

She believes students need to be taught how to communicate with others, via blogs and social networking, because

make these children responsible for their actions," she says. "If they don't use [cell phones] responsibly, it's back to pencil and paper. And then, 'Oh dear, what could be worse?'"

The policy would work to ensure that students understand they can't use cell phones to take photos of half-naked students, to cheat, or to post videos.

For Norris, cell phones answer one-to-one computer use. "If you give children a way to do their lessons which is comfortable and in a way they enjoy it, they will spend more time on it. And then they will learn more." **DA**



Liz Kolb's Web site, Cell Phones in Learning, features podcasts, product write-ups, blogs and YouTube videos.

shared on cell phones are archived. Cell phone companies have records of every phone call, every text message, every photo or video message sent from and to cell phones. Web sites such as Google, Facebook, MySpace and YouTube have records of all images and videos sent to their sites, as well as some ownership over them. Students think of their cell phones as private tools and the messaging as private. Thus, we are hearing about young teens sexting because they think it is a private act. Usually another child ends up showing sex messages or nude photos to a parent or teacher and that person ends up reporting it to the police. And we are starting to see young teens and preteens being brought up on criminal charges for this. If you ask these students, they will say they thought they were sending a private picture or message to a friend, not child pornography (what some students are being charged with). This is serious. This is a charge that could go on their permanent record.

The answer is that you don't just give a teenager keys to a car. There are rules of the road. And 90 percent of teens

abide by them when they understand the consequences. So it's about getting kids to understand that everything you do on cell phones is public, not private.

The answer is that you don't just give a teenager keys to a car. There are rules of the road.

Describe some specific inappropriate uses of cell phones. How could administrators handle each of them?

LK: *Cheating.* Cell phones are not the root cause of cheating. Cheating has been happening in schools since the one-room schoolhouse. However, as educators we have the power to control and structure how cell phones are used in the classroom as well as educating students on the consequences of their actions. For example, teachers can tell students to put their cell phones on vibrate and leave them in the front of the room when they enter the class.

Using video or photos to embarrass staff

or students. There are many examples of students using school-sanctioned cameras and camcorders to take and post inappropriate pictures of faculty and students. You do not need a cell phone to secretly document and publish school happenings. Schools have not taken away cameras and camcorders. As a matter of fact, because messages are archived on cell phones, it is easier to find out who took and posted the inappropriate media.

Disrupting class, talking to or texting friends or family members. This is very easy. When students enter the classroom, they put their cell phones on vibrate or turn them off. They place them on the teacher's desk. When the teacher is ready to use them for learning, she or he tells the students to get their cell phones. Just as teachers create classroom rules about raising hands or being quiet during an exam, they can do the same for cell phones.

www.DistrictAdministration.com
Read more from Liz Kolb and about ideas for using cell phones in classrooms.



From Cell Phone Skeptic to Evangelist

BY ANGELA PASCOPELLA

LIZ KOLB STARTED HER EDUCATION CAREER AS A TEACHER OF MIDDLE AND high school social studies in Wyoming City Schools in Cincinnati. She was also a teacher and technology coordinator at Grandview Heights City Schools in Columbus, where she adamantly opposed cell phones in school until she had an “ah-ha” moment. She then founded the Web site Cell Phones in Learning (www.cellphonesinlearning.com) while writing the book *Toys to Tools: Connecting Student Cell Phones to Education*. She recently earned a doctorate in education with a focus on learning technologies and is an adjunct professor at Madonna University in Livonia, Mich. In this interview, Liz answers questions of wary school administrators regarding cell phones in class.

DA: How and when did your enthusiasm for cell phone use in the classroom start?

Kolb: As a teacher and technology coordinator at Grandview Heights, I wrote policies against having cell phones in school and wanted them banned outright. I found them to be distracting and didn't see any educational value.

Around 2003, I was showing some teachers in the district how to blog, and a message from the site popped up on my screen stating, “Audioblog on your cell phone.” Being the curious tech person, I called the number. It then posted an MP3 file to my site with an RSS feed for a podcast. I realized then that was the simplest podcast I had ever made. Before, podcasts required uploading and downloading RSS feeds from different audio files. That was the “ah-ha” moment for me—that a cell phone could be a very productive tool. I wondered, “What else can be done with a cell phone?” I now call it the Swiss Army knife of education tools.

DA: In general, administrators tend to be skeptical of using cell phones in

class, just as you once were. What are the reasons are for this, and are any of them valid concerns?

LK: There are a few reasons, and they are all valid. First, most administrators did not grow up using cell phones in learning; therefore, they do not have a vision of

I call it the Swiss Army knife of education tools.

how they could be a learning tool. Since we know from research that teachers often teach the way they were taught, it is no surprise that teachers and administrators are reluctant to integrate students' everyday technologies. And it is interesting that most educators use cell phones on a daily basis for their own professional or personal organization and management, yet they still have trouble seeing how students could benefit from learning how to use their own cell phones.

Second, the media has presented many negative perspectives of teens and cell phones, such as sexting, cheating with cell phones, texting while driving,

and using them as a tool of distraction during class time.

Finally there is a fear of the unknown. Administrators are well aware that most students know more about cell phones than they do. Many administrators have never sent a text message, while teens are sending multiple text messages in minutes. Some administrators are fearful of students knowing and understanding something more than they do. Others are fearful of community or parent backlash at using such a controversial tool in school.

DA: How can administrators promote cell phone use in class while keeping students from unacceptable uses?

LK: It's called mobile literacy education. Because over 70 percent of U.S. schools ban cell phones and the rest often have strict use policies, schools do not educate students on appropriate or inappropriate uses of cell phones. Students have no idea what the lifelong consequences of their casual text messages or mobile photos could be. For example, most students (and adults) do not understand that text messages and photos or videos

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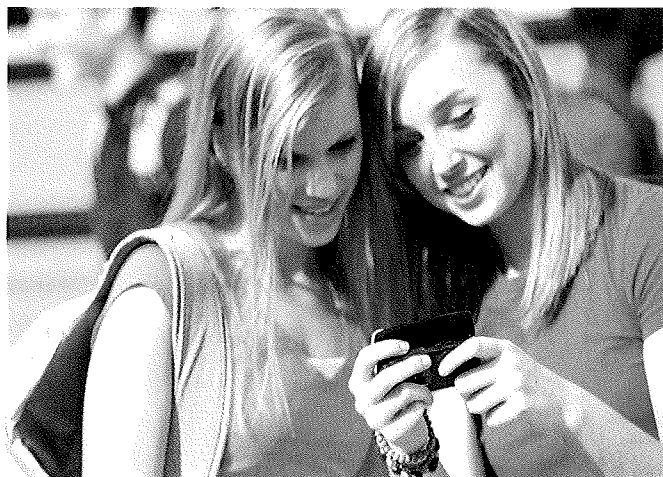
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Some parents (above) wait, while others call to get information about their children after a Coral Gables (Fla.) High School student was stabbed to death and another taken into custody this past September.

PROFESSIONAL OPINION

BY KENNETH S. TRUMP

Is It Safe to Allow Cell Phones in School?

If you can't say no to cell phones, start beefing up your emergency crisis plans.

CELL PHONES WERE banned from most schools years ago, but after the Columbine High School and 9/11 tragedies, parents started pressuring some school boards and administrators to reverse the bans. On its surface, allowing students to have cell phones under the guise of school safety may seem like a “no-brainer.” But an in-depth analysis suggests students having cell phones could create a less safe situation in a crisis.

The Discipline Challenges

On a daily basis, cell phones disrupt the educational environment. Students cannot benefit from classroom instruction if they are distracted by incoming text messages or calls. Administrators also worry about cell phone cameras being used to take and spread inappropriate photographs of students in restrooms and locker rooms. And cyberbullying presents a similar new challenge. More cell phone videos of fights among youths, including those occurring on school grounds, are online. School bus drivers tell of incidents

of friends, family members and gang members awaiting the arrival of buses at drop-off sites in response to text messages sent by students during conflicts on the buses. And cell phones have been used to call in bomb threats. In one Virginia community, the caller used discount store “throwaway” cell phones that could not be traced to make two bomb threat calls.

Impeding First Responders

Many parents and some school officials see no potential harm in students having cell phones in a school crisis—at least until the crisis occurs. During a crisis, such as a shooting, students need to take direction from adults. School leaders may need to lock down or evacuate the building. And students who are using cell phones during a crisis can easily miss life-saving directions. In addition, students texting and calling parents can encourage parents to flock to the school. Increased vehicle traffic around campus can impede first-responder vehicles from entering and exiting the school. And a plethora of parents arriving on campus can overwhelm school

crisis team parent-student reunification processes and can hinder effective lockdowns or evacuations in an emergency.

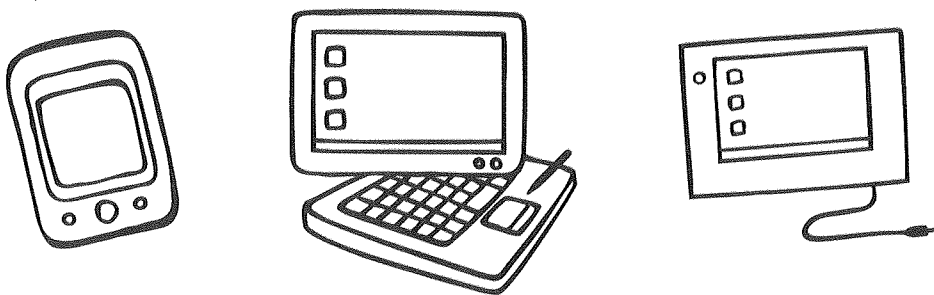
It is also possible for cell phone systems to be overloaded and, in turn, for emergency officials and school resource officers (SROs) to have difficulties in using their own cell phones to communicate.

We advise school leaders to thoroughly analyze and discuss the downside of cell phones related to school safety issues. We also strongly advise them to have exceptionally strong emergency response and crisis communications plans to counter the negative impact cell phones have on real crises and rumors. The question is no longer whether cell phones will add challenges to school crisis management, but instead how strong their impact will be.

www.DistrictAdministration.com
Read more details on discipline challenges and the Columbine and 9/11 backlash.

Kenneth S. Trump is president of National School Safety and Security Services, a Cleveland-based national school safety and crisis-preparedness consulting firm.

How do you improve upon what already works well? Very carefully.

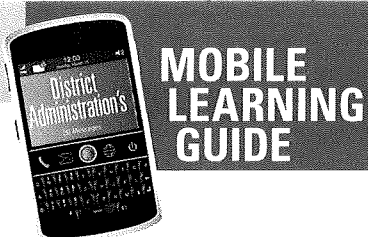


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year by equipping all sixth-graders at its John F. Kennedy School, which serves students in grades 2 through 8, with Nova5000 mobile devices preloaded with science and math applications.

Sixth-grade teacher Mark Abbott has steered his classes to virtual manipulative exercises available for free on the Internet, including the math games on funbrain.com and probability exercises that involve rolling virtual dice. The school has also purchased probeware—attachable to the handheld devices—to help with various scientific measurements, from wind speed to temperature changes. “I also like the application that lets students write with a stylus in their own hand and convert it to a digital file,” Abbott adds. “That’s a unique feature beyond your typical laptop.”

Jim Hermes, Spring Valley’s superintendent, is also looking beyond the typical laptop as he contemplates the future of one-to-one computing throughout the school. “We’re just at the beginning stages, but we’re hoping to find a device that’s durable and can be used in every class,” Hermes says, adding that in the longer run, mobile devices make more financial sense than trying to equip all students with laptops. “We just purchased new MacBook’s for our lab, and while you want the best for people, you have to ask, ‘What can you afford?’”

The Hurdles Ahead

Getting beyond the pilot programs in mobile learning may take some doing, including changing the dominant attitude about the place of cell phones and iPods in the classroom.

Etech CEO Geoff Elwood admits that mobile learning advocates have to overcome what he calls the “Quantas” educational approach, referring to the Australian airline. “You strap yourself in and turn off all electronic devices,” he explains. “But you could be engaging students in a much richer, more fluid environment. We have kids around the planet working together



In October, Verizon donated 150 HTC phones to fifth-graders at Cimarron Elementary School in the Katy (Texas) Independent School District to use in various lessons.

[on the *Coraline* project].”

Soloway immediately quells educator concerns by modifying the student phones so they are not truly phones. “The first thing we do is turn off the voice and texting capabilities,” he notes. “This isn’t a phone. It’s a computer.”

Other educational experts recommend strong and clear acceptable use policies as an alternative. Still others have lingering doubts about the limitations of smartphones and other handheld devices. Susan Einhorn, executive director of the Anytime, Anywhere Learning Foundation in Montreal, says that screen size matters. “I

smartphones can connect to schools with wireless networks, students cannot use them outside of school under the current E-rate fund requirement. The current requirement states that mobile devices be eligible for funding only if they are kept in one location, says Sprint’s Flood.

And new cell phone subscriptions, which often include phones for little or no additional cost, still run more than \$30 a month per device, which can add up quickly and be cost prohibitive for many districts struggling to make ends meet.

One solution, suggests Flood, would be to change the current E-rate requirement.

“The first thing we do is turn off the voice and texting capabilities. This isn’t a phone. It’s a computer.”

—**Elliot Soloway**, professor, University of Michigan’s Center for Highly Interactive Computing in Education

find it hard to write on my cell phone, and my kids find it hard to write more than short sentences,” she points out.

Einhorn adds that she’s more concerned with the pedagogical quality of what’s currently available. “While there are some educational applications, many are not intellectually challenging or truly transformative,” she says. “I don’t consider a flashcard application transformative. We’re just at the beginning.”

Even mobile learning advocates agree that the cost of connectivity for smartphones needs to come down considerably for them to be used universally. While

In the meantime, Southgate’s Toschi is thinking ahead. Toschi envisions creating a new high school course in multimedia creation that would attract students interested in graphic arts, computer programming and teaching. As part of the curriculum, the class would create new mobile learning games for the district’s elementary students. “It’s going to be gigantic, because we’ll be developing custom software by our students for our students,” Toschi says. “And we won’t have to pay for it.” **DA**

Ron Schachter is a contributing writer for DISTRICT ADMINISTRATION.

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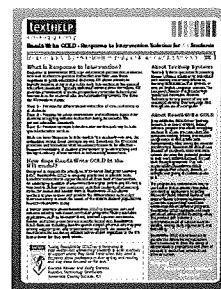
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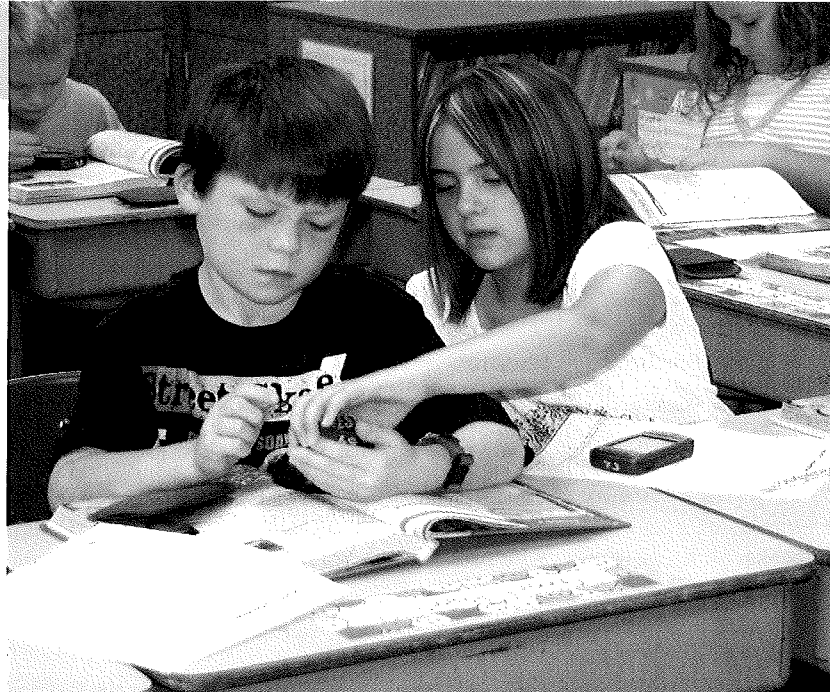
drawing and animation tools.

For example, Soloway says, earth science teachers can create a range of activities for studying the water cycle, for which students can create a concept map, draw an animation of the water cycle process, collect daily rainfall amounts, post the results on an Excel spreadsheet set up by the teacher, and write reports in Word. "The nice thing," adds Cook at Trinity Meadows, "is that we didn't have to change the curriculum from what we'd done before to fit the piece of technology."

Here are examples of other current district cell phone programs:

- After last year's pilot program using PDAs at St. Marys City (Ohio) School District, Kyle Menchhofer, the district's technology coordinator, implemented a cell phone program for 630 students in grades 3 through 6. He hopes to expand the mobile phone program in future years up to grade 12.

Last April, Verizon donated 30 Samsung smartphones with which students



A fifth-grader shares with her classmate at West Elementary School in the St. Marys City (Ohio) Schools information about the Samsung smartphones they started using in class last spring.

- In October, 150 HTC phones were donated by Verizon to fifth-graders at Cimarron Elementary School in the Katy (Texas) Independent School District to use in various lessons. "I watch my kids and I watch how they operate and the cell phone is much more prevalent and plays a more active role in their lives than any other device out there," says Lenny Schad, chief information officer at Katy. "That's what the kids today really want: access to the Internet."

"There were less behavioral issues, and parents were saying they'd buy their kids this before a PlayStation."

—Kyle Menchhofer, technology coordinator, St. Marys City (Ohio) School District

could type papers in Microsoft Word, use Excel spreadsheets for math problems, and use GoKnow software for animation. One student, for example, created a mini-movie using slides to show a math problem and included the steps in solving the problem, Menchhofer says.

Students can also upload assignments that the teacher sends to the server, and then the teacher can grade those assignments and submit them back to the students electronically. "The students were more engaged," Menchhofer says about the program. "There were less behavioral issues, and the parents were saying that they'd buy their kids this phone before they'd buy a PlayStation."

And Schad is working with cell phone carriers to come up with a data plan that is affordable to "sustain the project on a bigger scale" across the district.

- In November, 80 students at Haverstraw Middle School in the North Rockland Central School District in Garnerville, N.Y., started using Palm Treos, with Sprint service, for every subject. This pilot project was the idea of Susan Tomko, the district's director of information systems. "We're looking at what is sustainable going toward the future," she says. Replacing old computers or fixing them every year and then "seeing kids walking around with cell phones all the time" made it all click, she says.

"I thought, 'What a great device,'" she says. "You see businesspeople doing all their work and using all their contacts on this phone and I thought, 'Why can't our students do this?'" Aside from that, cell phones instead of typical computers are handy in Haverstraw, which was built in 1920 with no more capacity to "plug in devices," Tomko says.

Other companies, including Epsilon, Blackboard, Norway-based it's learning, and Australia-based Etech Group have also developed mobile learning platforms. Etech's Studywiz Spark Mobile has built on its 10-year-old laptop version used at 2,500 schools in about 30 countries with a particular focus on iPhones and iPod Touch devices.





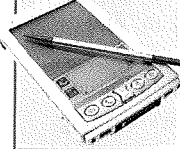




For a \$3 to \$8 annual license per device from Etech, which won the Software and Information Industry's CODIE Award this year for best mobile software solution, students can download assignments and related documents, as well as teacher-created podcasts and galleries.

They can also take quizzes and tests and store their work in an "e-locker," from which they can transfer files to other devices such as laptops or desktop computers at home. Teachers can use Studywiz's management tools to record and monitor student progress and time spent on task.

In Illinois, meanwhile, the Spring Valley district, thanks to a grant from Fourier Systems, began the 2009-2010 school ▶

Mobile Devices at a Glance

BY KURT EISELE-DYRLI

Category	Examples Include	Price	Internet Connectivity	Average Size	Operating System	Applications	Ease of Use	Battery Life
 Laptops	Models from Dell, Gateway, Samsung, Apple and more	\$400 to \$1,800+	Included on essentially every model, either wireless or wired	Over 12-inch screen, full-size keyboard, over 3 pounds	Full powered and full featured—from Microsoft, Apple or Linux	Practically anything available online or on CD	Full-size keyboard and integrated mouse	2 to 4 hours
Summary: Once the end goal for one-to-one programs, most laptops on the market today offer more computing power than is necessary for most school tasks, and are both larger in size and higher in price than most other mobile devices.								
 Tablets/Convertibles	Fujitsu Stylistic, Dell Latitude, Intel Classmate	\$500 to \$1,200+	Included on essentially every model, either wireless or wired	Over 12-inch screen, 2 to 4 pounds, some with full-size keyboards	Full powered and full featured—from Microsoft, Apple or Linux (larger models); Windows XP, Linux or other OS (smaller netbook-based models)	Practically anything available online or on CD; smaller netbook-based models lack a disk drive and depend on online or preinstalled programs	Touchscreens—especially helpful for younger students	2 to 4 hours
Summary: Tablets and convertibles have generally the same specifications as laptops or netbooks but add touchscreen functionality, which has advantages for education but often comes at a higher price.								
 Netbooks	Asus Eee, HP Mini, Acer Aspire One	\$500 to \$1,200+	Wireless or wired	10- to 12-inch screen, under 3 pounds	Low powered, such as Windows XP or Linux	Designed for online applications, netbooks lack a CD drive and have less computing power and storage than laptops	Integrated touchpad mouse; keyboards that are 60-90 percent of full-size and therefore easier for younger students to use	4 to 10 hours
Summary: Low powered, portable and inexpensive, netbooks are designed for essential online tasks such as research, word processing and e-mail, and have been very popular with schools in the past 2 to 3 years.								
 MP3 Players	Apple iPod, Microsoft Zune, Creative Zen	\$50 to \$300	Wired through a PC or wireless; varies depending on model	2 inches long and 10 grams, to 5 inches long and 11 ounces	Low powered, such as Windows XP or Linux	Limited to what has been developed in this format, such as video or audio podcasts, most models are unable to use traditional software or access most online content	Simple interfaces, usually a few buttons and a dial	8 to 36 hours
Summary: Comparatively inexpensive and useful for listening to audio and watching video segments, the small size and a lack of keyboard limits the capabilities of MP3 players and their usefulness to schools.								
 PDA's	HP iPaq, Palm Pilot	\$200 to \$600	Wireless or through a PC	4 to 5 inches long and about 5 ounces	Either PDA-specific, such as Palm OS, or a mobile version, such as Windows Mobile	Most PDA's can run common computing programs such as Word, Excel and PowerPoint	Most use a combination of buttons and a touchscreen with stylus; most users download content already created on a PC or Mac	4 to 10 hours
Summary: Once a promising segment for education, PDA (personal digital assistant) sales have plummeted in recent years, due in part to competition from inexpensive, more user-friendly netbooks but also from increasingly powerful smartphones.								
 Handheld Video Game Systems	Sony PSP, Nintendo DS	\$150 to \$250	Wireless integrated on PSP, available on DS	About 6.5 inches long and 10 ounces	Low-powered operating system designed for gaming	A variety of educational content specific to each, as well as entertainment games	Both use buttons; the Nintendo adds a stylus and touchscreen	5 to 10 hours
Summary: These game systems are very familiar to most students, but without a keyboard or versatile operating system, most educational use is limited to the edugaming titles available.								
 MIDs	Intel MID, Fujitsu Lifebook	\$800 to \$1,200+	Wireless	5 to 8 inches long and under 2 pounds	Full-powered editions of Windows or Linux	Capable of both online applications and bundled programs such as Word and Excel	Very compact keyboard and trackpad, or a touchscreen with stylus	3 to 7 hours
Summary: A category of computers that are smaller yet more powerful than netbooks and larger than smartphones, most MIDs (mobile Internet devices) are more powerful than necessary and too expensive for schools, and many industry analysts see them as a short-lived segment.								
 Feature Phones	LG enV2, Samsung Rant	\$0 to \$150	Varies; some can access the Internet, while others cannot	About 4 inches long	Typically run limited, special purpose operating systems that provide limited functionality and expandability	Most include a set of basic applications and cannot install new programs	Newer models have compact qwerty keyboards	10 to 15 hours
Summary: Still the dominant type of cell phone on the market, feature phones' educational use is limited in comparison to other mobile devices, and they are rapidly losing market share to more powerful and increasingly less expensive smartphones.								
 Smartphones	Motorola CLIQ, Apple iPhone, RIM BlackBerry	\$50 to \$200+	Wireless	About 4 inches long	Versions of Windows, Mac OS, Linux, Google Android, or a unique, model-specific operating system	The iPhone has thousands, many for education; other models, such as BlackBerrys, are more business-friendly and have become popular with administrators	Several have touchscreens, but most use a compact keyboard, trackball and/or buttons	5 to 10 hours
Summary: More and more popular with students, smartphones also have ever-increasing computing power. Users are now able to not only make phone calls but also do school-friendly tasks like going online, reading and writing e-mail, capturing digital pictures and video, and more.								



MOBILE LEARNING GUIDE

Mobile Devices in the Classroom

Keller, Texas, in fact, students caught using cell phones have them confiscated, and their parents have to pay at least \$15 to ransom them.

So it was all the more remarkable this past winter and spring that the fifth-graders at Trinity Meadows spent most of their days on their HTC 6800 smartphones, using GoKnow's platform. Rather than violating district policy, though, the 55 youngsters were leading the way in a pilot program using the new generation of cell phones and their advanced technology for educational ends. The program was cobbled together by fifth-grade teacher Matt Cook, who used new devices donated by HTC, a cell phone manufacturer, as well as free connectivity from Verizon and complimentary use of GoKnow software.



This past winter and spring, fifth-graders at Trinity Meadows Intermediate School in Keller, Texas, spent most of their days on HTC 6800 smartphones in a pilot program.

determine the best tools and applications for content delivery, student collaboration and assessment.

Reducing the Digital Divide

The affordability and extreme portability of handheld devices have also raised hopes of reducing the digital divide. "They may

phone or iPod, a \$30 to \$40 monthly telecom fee, and an annual software subscription fee of \$8 to \$35 per device—have impressed district IT departments as an alternative to the nearly \$1,000 cost for many laptops and the many more thousands of dollars needed to build and support a wireless network.

Mike Toschi, the director of technology services for the Southgate (Mich.) Community Schools, is sold on the savings. "We can get five iPod Touches for the cost of one MacBook," he figures. The fifth-graders at Southgate's Chormann Elementary School are in their second year of using the iPods to study and discuss the novel *Coraline* with peers in Australia, England and Singapore. Teachers in these countries use the devices to share lesson plans.

Customized Learning Platforms

The movement toward mobile learning has accelerated with the help of platforms that turn mobile devices into miniature classroom computers. "Laptops usually come with business tools installed and are not equipped with educational software," says Soloway, who has been developing GoKnow for the past seven years. Besides creating uniform screens on a range of smartphones and mobile operating systems such as Windows Mobile, GoKnow allows users, for \$35 per device annually, to easily deploy Web browsers and applications like Microsoft Word and Excel and to use built-in graphic organizing. ►

"I integrated the phones into everything we did."

—Matt Cook, fifth-grade teacher, Trinity Meadows Intermediate School, Keller, Texas

"I could have students draw solar system orbits on their devices," Cook points out, "and then animate them to show them in real orbit." In math, Cook's students used animations to change number values by moving around decimal points. And for joint research projects, they used their smartphones to take pictures, explore relevant Web sites, fill in spreadsheets, and compose Word documents that they shared by pointing the devices end-to-end and beaming the information to each other.

"I integrated the phones into everything we did," says Cook. "For lessons traditionally done with a paper and pencil, we now were able to do them in color, with animation, and with more depth and complexity. It was one of the most exciting things I've ever done."

Based on data from the pilot and vendor support, the district's technology director, Joe Griffin, says the district will be conducting several pilots this fall to

make technology more accessible to more kids sooner," says Mary Ann Wolf, executive director of the State Education Technology Directors Association in Glen Burnie, Md. "If you had to wait for other technological resources, students would be left out."

"People are saying, 'Here's another opportunity to look at one-to-one computer initiatives and revisit the goals for these projects,'" adds Mike Flood, vertical manager for K12 education at Sprint. "There's been an explosion of applications for cell phones, and a lot have made it into the learning space."

Cell phones also perform more reliably than typical computers, their advocates say, and telecom companies such as Nextel, AT&T and Verizon have developed a reputation for robust Internet service and speedy resolution of connectivity problems, if and when they arise.

The cost of a mobile-computing program—usually \$200 to \$300 for a smart-

Mobile Devices in the Classroom

BY RON SCHACHTER

Phones, netbooks and iPods are finding a place in the curriculum and expanding student access to technology.

AS CELL PHONES—WITH ever-expanding possibilities of texting, Web browsing, and game playing—have multiplied in recent years among teenagers and even preteens, so have the concerns of teachers and administrators about the distractions these devices can cause. A survey of students and parents earlier this year by the group Common Sense Media found that almost 70 percent of schools around the country ban student cell phone use during the school day.

But some districts and administrators are realizing the untapped potential of cell phones. It's part of an "anytime, anywhere" learning movement that leaves laptops and even smaller netbooks behind, proponents say, in favor of more mobile, affordable and reliable handheld devices—from "smartphones," which can run operating systems such as Windows Mobile and a host of software, to iPods, known more for playing audio and video but adaptable to more interactive applications through new educational platforms (see the sidebar on mobile devices).

"Technology has finally progressed to where mobile devices are cheap enough and powerful enough to use," observes Elliot Soloway, a professor at the University of Michigan and at that school's Center for Highly Interactive Computing in Education. Soloway, who believes that cell phones are the true one-to-one computer option for schools, is also co-developer of GoKnow, a mobile learning environment

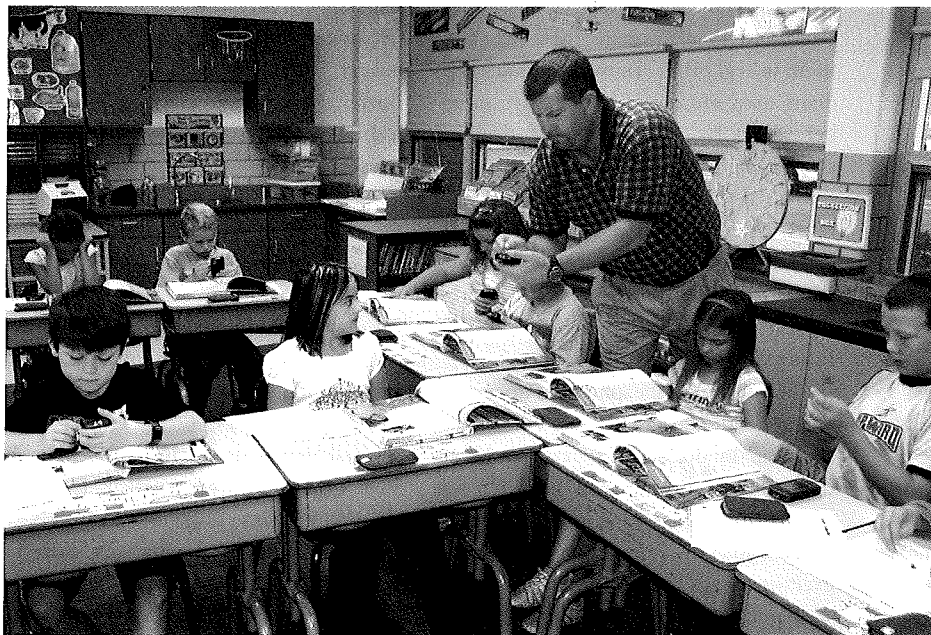
that runs educational software on handheld computers.

Earlier this year, a study of 25 mobile learning initiatives worldwide by the Joan Ganz Cooney Foundation Center at the Sesame Workshop anointed them the wave of the future. "Just as Sesame Street helped transform television into a revolutionary tool for learning among young children four decades ago, advances in mobile technologies are showing enormous untapped educational potential for today's generation," the report's authors wrote. And last February, the two-day,

first annual Mobile Learning Conference in Washington, D.C., presented case studies, research and policy discussions about the emerging field.

From a Ban to Creative Lessons

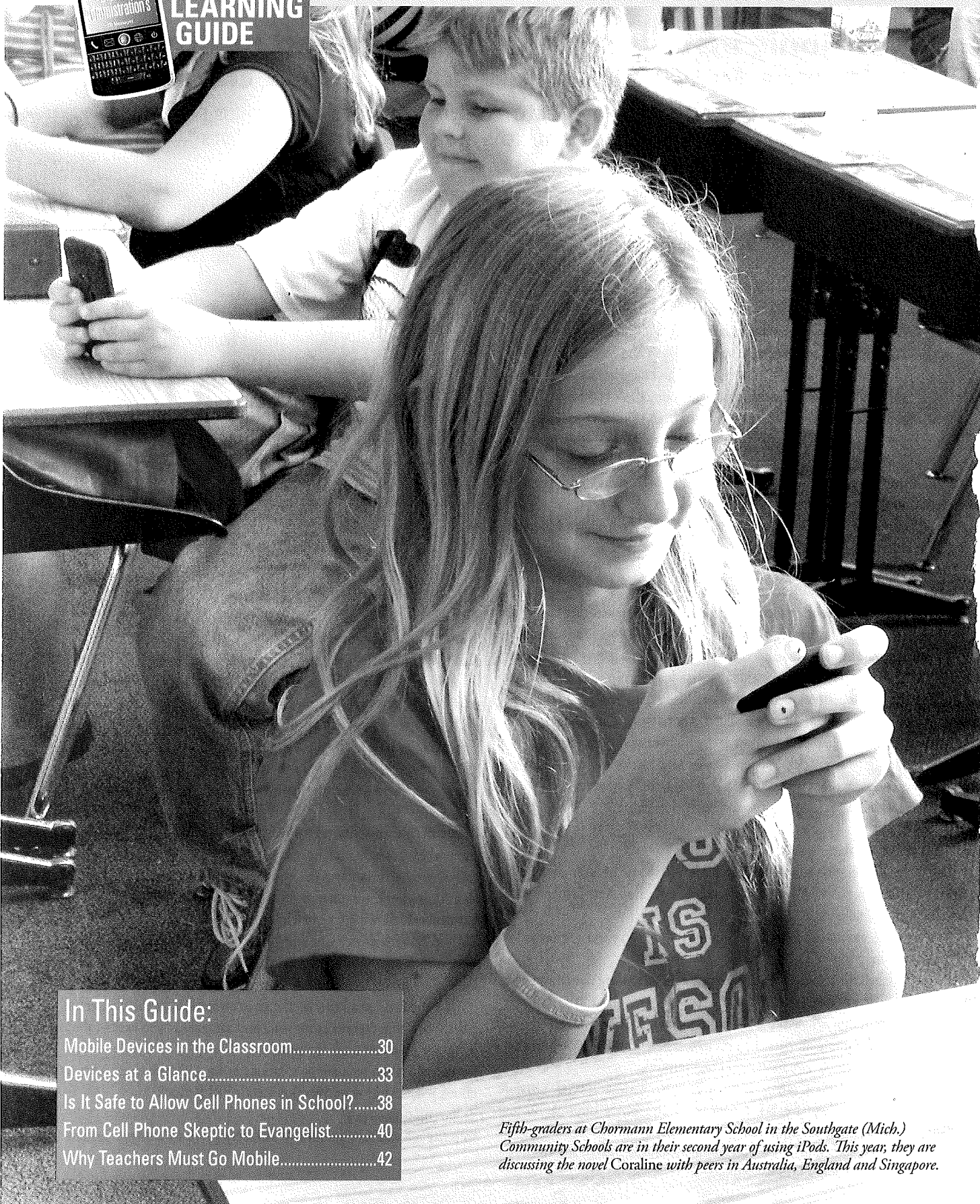
Not everyone is convinced, though, and doubters point to the lack of enough software programs to make mobile devices a worthwhile substitute for laptops and desktops, not to mention the limitations of their small size and their reputation for causing trouble on campus. At Trinity Meadows Intermediate School in ►



At West Elementary School in the St. Marys (Ohio) City Schools, District Technology Coordinator Kyle Menchhofer helps fifth-graders use cell phones to learn vocabulary terms and definitions in social studies.



MOBILE LEARNING GUIDE



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*Fifth-graders at Chormann Elementary School in the Southgate (Mich.) Community Schools are in their second year of using iPods. This year, they are discussing the novel *Coraline* with peers in Australia, England and Singapore.*

ViewSonic installs effective, integrated multimedia solutions to create a truly smart board classroom

ViewSonic's short throw projector helps teachers maximize students' learning experience and lowers school district's costs*

Interactive whiteboard, small room solution

A leading school in Washington State needed a solution which allowed them to use interactive whiteboards with a projector for a complete interactive learning solution. This school district looked to their education technology reseller who recommended ViewSonic.

An interactive whiteboard system, allows the teacher to interact directly with a computer by writing on the image, which is projected onto the whiteboard. By utilizing a wall mounted, short throw projector, with a whiteboard, teachers can stand in front of the class while giving a lesson - without having a bright light shining in their eyes. Also they are not blocking any of the images projected behind them so there is no disruption of learning. The ViewSonic PJD6381 short throw projector worked seamlessly with this interactive whiteboard system and easily wall mounted above the board using the WMK-027 Short Throw Mounting Arm. It was the perfect choice for this school district.

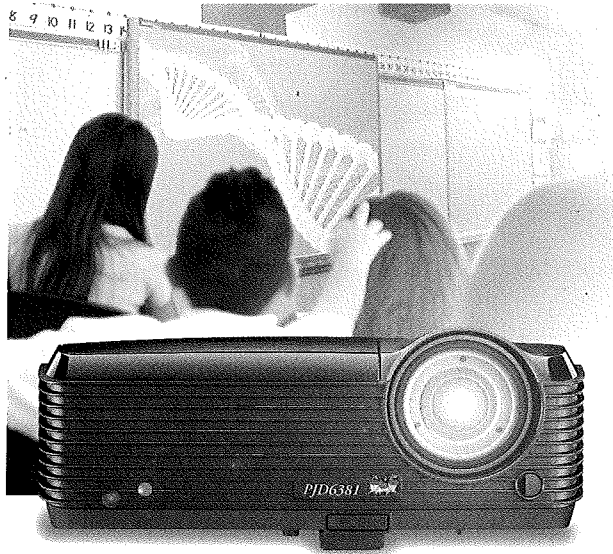
Increased student engagement

A study on the use of interactive whiteboard solutions noted it keeps students more engaged in learning. A recent study noted "...school and technology leaders need to be aware of the potential these whiteboards have for increasing student achievement through increased student engagement." When asked "Did the visuals projected on the board help you to better learn the information?" Many students responded affirmatively. One said "To some people, when you speak to them, it goes in one ear and out the other. The visual helps it to stick." When asked about the interactive whiteboard experience another student noted "I concentrate a lot harder when we use the whiteboard. It teaches us a lot, but it's lots of fun."

Wise Choice

The Washington school district chose ViewSonic because of the total projection solution including network capability and software with benefits including:

- The ability for a network administrator to control the projectors from a central location
- Scheduling on/off functions ensure projectors are not left on overnight, saving energy
- Scheduling which input the projector should display at a given time. Easily tuning all classroom projectors to a central channel for a virtual assembly or educational programming
- Issuing school safety announcements, with a special software feature, allows for fast broadcast of emergency information and instructions remotely
- Ease of maintenance with automatic notification to administrator if a lamp needs to be changed



*Lower cost of ownership

Additionally by choosing the ViewSonic solution, this Washington school district received the benefits of DLP™ technology - no image/color degradation over time yields a much longer product life. The PJD6381 also has no filter to clean or change, and has an easily accessible top bulb access. The top load design facilitates changing the lamp without taking the projector down which saves maintenance labor costs as compared with projectors that use filters.

Short throw advantages

Even when not using an interactive whiteboard, short throw projectors offer other advantages in any learning environment. The PJD6381 short throw projector can be positioned very close to the screen, as close as three feet, allowing for more installation options.

Finally, with a three year limited warranty, this school district knew that with ViewSonic their projectors would be bringing interactive learning solutions to students for years to come.

It all adds up to a lower total cost of ownership for the district and a better learning experience for students that makes them excited about learning. Who could ask for more.

For education technology solutions or for a chance to evaluate an eBook reader visit: www.ViewSonic.com/FREEeBook.

Study cited above is at http://teach.valdosta.edu/are/Artmanscript/vol1no1/beeland_am.pdf

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